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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,308	03/29/2001	Usman A.K. Sorathia	82,222	7684

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Naval Surface Warfare Center
Carderock Division Headquarters
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9500 MacArthur Boulevard
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EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

17

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-17

Office Action Summary

Application No. 09/822,308		Applicant(s) SORATHIA, USMAN A.K.	
Examiner Michael J Feely		Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 17-20 are pending in the instant application.

Claim Objections

2. The objection to claims 9, 13, and 14 has been rendered moot by the cancellation of claims 2, 9, 12-14, and 16.

Claim Rejections - 35 USC § 112

3. The rejection of claims 2, 9, 12-14, and 16 under 35 U.S.C. 112, first paragraph, has been rendered moot by the cancellation of claims 2, 9, 12-14, and 16.
4. The rejection of claims 2, 9, 12-14, and 16 under 35 U.S.C. 112, second paragraph, has been rendered moot by the cancellation of claims 2, 9, 12-14, and 16.

Specification

5. The objection to the disclosure has been overcome by amendment.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. The rejection of claims 2, 9, 12-14, and 16 under 35 U.S.C. 103(a) as being unpatentable over Licht (US Pat. No. 4,467,577) has been rendered moot by the cancellation of claims 2, 9, 12-14, and 16.

Response to Arguments

8. Applicant's arguments with respect to new claims 17-20 and Licht (US Pat. No. 4,467,577) have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;

or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claims 17, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Day et al. (Pub. No. US 2001/0031350 A1).

In all of claims 17, 19, and 20, the preamble recites “the improvement residing in a sequence of steps including”. It is critical to note that this does not mean that steps a) through d) are performed in sequence. The claimed “sequence” merely “includes” steps a) through d). No order is specified.

Regarding claim 17, Day et al. disclose: in a process for protective fabrication of a composite structure (paragraph 0002) to be exposed to seawater environments (paragraph 0044), the improvement residing in a sequence of steps including: a) forming a barrier (lines 1-4 of paragraph 0057); b) introducing a fire resisting agent into the barrier after said forming thereof (lines 1-4 of paragraph 0057; lines 7-10 of paragraph 0058); c) forming a substrate (paragraph 0057); and d) attaching the barrier to the substrate in underlying relation thereto before completing the fabrication of the composite structure (paragraph 0057-0058); wherein said introduction of the fire resisting agent comprises infusion into the barrier (paragraphs 0057-0058).

Day et al. disclose a composite material that includes an exterior skin that is infused with a flame resistant phenolic resin. This exterior skin is in contact with a barrier film that is comprised of a material that has inherent adhesive properties. The opposite face of the barrier film is in contact with an inner skin, which is in turn in contact with a core material. Because the composite in Day et al. is a multi-layer structure, the "substrate" of the claimed invention can be correlated to multiple portions of the composite set forth in Day et al.:

- a combination of (barrier film)/(inner skin)/(core)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate
Inner Skin		
Core		

- a combination of (barrier film)/(inner skin)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate
Inner Skin		

- only the (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate

- a combination of (inner skin)/(core) with an intermediate adhesive layer (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Adhesive
Inner Skin		Substrate
Core		

- only the (inner skin) with an intermediate adhesive layer (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Adhesive
Inner Skin		Substrate

It should be noted that the barrier film of Day et al. is viewed as an integrated part of a composite substrate, as the substrate itself, or as an intermediate adhesive layer. Regardless of how the overall combination of layers is viewed, Day et al. fully anticipate the claimed invention.

Regarding claim 19, Day et al. disclose: in a process for protective fabrication of a composite structure (paragraph 0002) to be exposed to seawater environments (paragraph 0044), the improvement residing in a sequence of steps including: a) forming a barrier (lines 1-4 of paragraph 0057); b) introducing a fire resisting agent into the barrier after said forming thereof (lines 1-4 of paragraph 0057; lines 7-10 of paragraph 0058); c) forming a substrate (paragraph 0057); and d) attaching the barrier to the substrate in underlying relation thereto before

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completing the fabrication of the composite structure (paragraph 0057-0058); wherein said attaching of the barrier to the substrate is performed by providing an adhesive between the barrier and the substrate (paragraphs 0057-0058).

As in claim 17, the claimed "substrate" can be correlated to multiple portions of the composite set forth in Day et al.:

- a combination of (inner skin)/(core) with an intermediate adhesive layer (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Adhesive
Inner Skin		Substrate
Core		

- only the (inner skin) with an intermediate adhesive layer (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Adhesive
Inner Skin		Substrate

It should be noted that the barrier film of Day et al. is viewed as an intermediate adhesive layer. Regardless of how the remaining combination of layers is viewed, Day et al. fully anticipate the claimed invention.

Regarding claim 20, Day et al. disclose: in a process for protective fabrication of a composite structure (paragraph 0002) to be exposed to seawater environments (paragraph 0044), the improvement residing in a sequence of steps including: a) forming a barrier (lines 1-4 of paragraph 0057); b) introducing a fire resisting agent into the barrier after said forming thereof (lines 1-4 of paragraph 0057; lines 7-10 of paragraph 0058); c) forming a substrate (paragraph 0057); and d) attaching the barrier to the substrate in underlying relation thereto before

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completing the fabrication of the composite structure (paragraph 0057-0058); wherein said introduction of the fire resistant agent is performed by infusion thereof into the barrier during said forming of the substrate to effect said attaching of the barrier to the substrate without using an adhesive (paragraphs 0057-0058).

As in claims 17 and 19, the claimed "substrate" can be correlated to multiple portions of the composite set forth in Day et al.:

- a combination of (barrier film)/(inner skin)/(core)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate
Inner Skin		
Core		

- a combination of (barrier film)/(inner skin)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate
Inner Skin		

- only the (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate

It should be noted that the barrier film of Day et al. is viewed as an integrated part of a composite substrate or as the substrate itself. The inherent adhesive properties of outer boundary of this substrate or composite substrate would have provided the capability of attaching the outer skin (barrier) to the substrate without the use of additional adhesive. Regardless of how the overall combination of layers is viewed, Day et al. fully anticipate the claimed invention.

Claim Rejections - 35 USC §102/103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 18 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Day et al. (Pub. No. 2001/0031350 A1) and Licht (US Pat. No. 4,467,577).

According to section 2131.01 of the MPEP, a 35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to: (A) Prove the primary reference contains an "enabled disclosure"; (B) Explain the meaning of a term used in the primary reference; or (C) Show that a characteristic not disclosed in the reference is inherent. In the following rejection, Licht is used to demonstrate an inherent characteristic of phenolic resin.

In claim 18, the preamble recites "the improvement residing in a sequence of steps including". It is critical to note that this does not mean that steps a) through d) are performed in sequence. The claimed "sequence" merely "includes" steps a) through d). No order is specified.

Regarding claim 18, Day et al. disclose: in a process for protective fabrication of a composite structure (paragraph 0002) to be exposed to seawater environments (paragraph 0044), the improvement residing in a sequence of steps including: a) forming a barrier (lines 1-4 of paragraph 0057); b) introducing a fire resisting agent into the barrier after said forming thereof (lines 1-4 of paragraph 0057; lines 7-10 of paragraph 0058); c) forming a substrate (paragraph

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0057); and d) attaching the barrier to the substrate in underlying relation thereto before completing the fabrication of the composite structure (paragraph 0057-0058); wherein the barrier is a mat (paragraph 0057) and the fire resisting agent is a phenolic resin (paragraph 0057).

Day et al. disclose a composite material that includes an exterior skin that is infused with a flame resistant phenolic resin. This exterior skin is in contact with a barrier film that is comprised of a material that has inherent adhesive properties. The opposite face of the barrier film is in contact with an inner skin, which is in turn in contact with a core material. Because the composite in Day et al. is a multi-layer structure, the "substrate" of the claimed invention can be correlated to multiple portions of the composite set forth in Day et al.:

- a combination of (barrier film)/(inner skin)/(core)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate
Inner Skin		
Core		

- a combination of (barrier film)/(inner skin)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate
Inner Skin		

- only the (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Substrate

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- a combination of (inner skin)/(core) with an intermediate adhesive layer (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Adhesive
Inner Skin		
Core		Substrate

- only the (inner skin) with an intermediate adhesive layer (barrier film)

Day et al.		Instant Application
Exterior Skin	=	Barrier
Barrier Film (Adhesive)		Adhesive
Inner Skin		Substrate

It should be noted that the barrier film of Day et al. is viewed as an integrated part of a composite substrate, as the substrate itself, or as an intermediate adhesive layer. Regardless of how the overall combination of layers is viewed, Day et al. read on the claimed invention.

In addition, it should be noted that Day et al. do not explicitly disclose that the outer skin (barrier layer) is intumescent, i.e. swelling or charring when exposed to flame. The claim language does not specify whether the intumescent property exists before infusion or after infusion; therefore, the limitation has been broadly interpreted to encompass either of these embodiments.

Day et al. infuse the outer skin (barrier layer) with a flame resistant phenolic resin (paragraph 0057). This infusion would have inherently provided the outer skin (barrier layer) with intumescent properties. Evidence that the presence phenolic resin within the outer skin (barrier) would impart intumescent properties to the overall outer skin (barrier), is found in Licht. Licht disclose, "preferred intumescent sheet material 11 is a flexible heat-expanding, fire retardant composition comprising an intumescent component in granular form such as hydrated

alkali metal silicate, an organic binder component, *an organic char-forming component such as phenolic resin*, and fillers," (column 2, lines 24-29). Licht demonstrates that the incorporation of phenolic resin into a sheet material inherently provides intumescent properties to the sheet, as a whole.

Therefore, if not explicitly taught in the reference, then the teaching would have been obvious to one of ordinary skill in the art at the time of the invention.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J. Feely
March 26, 2003



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700